

REMARKS

Claims 1 to 14 were pending in the above-identified application. Applicant has amended claims 1, 6, 11, and 14. Claims 1 to 14 remain pending.

Telephone Interview

Applicant thanks the Examiner for the telephone interview on May 16, 2007, in which the § 101 rejections were discussed but no agreement was reached.

Specification

Applicant has amended ¶¶ [0087] and [0099] of the Specification to update the filing information of a related application.

§ 101 Rejections

The Examiner again rejected claims 1 to 14 under 35 U.S.C. § 101 as being directed to non-statutory subject matter. Addressing Applicant's amendments and arguments, the Examiner found that the claims do not produce any useful result.

Applicant has amended all the independent claims to generally recite a data storage device that retrieves data from a snapshot tree structure and then transmits the retrieved data to a host device. This is supported by the Specification, which describes that snapshots are used to backup storage volumes in a data storage system, and that host devices accesses the storage volumes in the data storage system. See Specification, ¶¶ [0059] and [0030]. The data transfer between the data storage device and the host device produces a tangible, concrete result because it is a physical act (e.g., the data is being transmitted through electrical or optical signals), and the data transfer is useful because it can provide a point-in-time view of the base volume for a number of purposes (e.g., to return the volume to a previous state). For these reasons, Applicant respectfully requests the Examiner to withdraw the § 101 rejections.

§ 102 Rejections

The Examiner rejected claims 1 to 14 under 35 U.S.C. § 102(b) as being anticipated by the reference "File System Design for an NFS File Server Appliance" by Dave Hitz et al. (hereafter "Hitz et al.").

Claim 1

Addressing Applicant's previously submitted argument, the Examiner stated:

Applicant's main argument is that Hitz does not disclose a snapshot tree structure having a first snapshot that descends from a base volume and a second snapshot that descends from the first snapshot.

Applicant's teachings of the WAFL system, where the WAFL file system is a tree of blocks with the root inode similar to Applicant's tree structure, which describes the inode file, at the top, and meta-data files and regular files underneath (see Figures 1 and 2).

February 6, 2007 Final Office Action, p. 2. The Examiner then essentially repeated the same arguments in the March 27, 2006 Office Action without adding any new arguments.

It is unclear from above why the Examiner's rejected Applicant's argument that Hitz et al. only discloses a file system having files that descends from a root inode. The Examiner appeared to draw a parallel between the snapshot of claim 1 and the files of Hitz et al. However, a snapshot is not a single file but a point-in-time image of a file system having multiple files (e.g., a volume). At most, Hitz et al. discloses that a snapshot can be made of a file system by duplicating the file system's root inode. Hitz et al. never discloses that a file system (or a snapshot) can descend from another file system (or another snapshot). For these reasons, amended claim 1 is patentable over Hitz et al.

Claims 2 to 5

Claims 2 to 5 depend from amended claim 1 and are patentable over Hitz et al. for at least the same reasons as amended claim 1.

Claim 6

Amended claim 6 is a method claim that parallels amended apparatus claim 1. Thus, amended claim 6 is patentable over Hitz et al. for at least the same reasons as amended claim 1.

Claims 7 to 10

Claims 7 to 10 depend from amended claim 6 and are patentable over Hitz et al. for at least the same reasons as amended claim 6.

Claim 11

Amended claim 11 recites searching for a data block in a second snapshot, which descends from a first snapshot, which descends from a base volume, and, if the data block is not in the second snapshot, searching for the data block in the first snapshot. As described above, Hitz et al. does not disclose a snapshot tree structure having a first snapshot that descends from a base volume and a second snapshot that descends from the first snapshot. Accordingly, amended claim 11 is patentable over Hitz et al.

Claims 12 to 14

Claims 12 to 14 depend from amended claim 11 and are patentable over Hitz et al. for at least the same reasons as amended claim 11.

Summary

Claims 1 to 14 were pending in the above-identified application when last examined. Applicant has amended claims 1, 6, 11, and 14. For the above reasons, Applicant respectfully requests the Examiner to withdraw the claim rejections and allow claims 1 to 14. Should the Examiner have any questions, please call the undersigned at (408) 382-0480x206.

I hereby certify that this correspondence is being transmitted prior to expiration of the set period of time by being transmitted via the Office electronic filing system in accordance with § 1.6(a) (4).

/David C Hsia/
Signature

July 6, 2007
Date

Respectfully submitted,

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